CLAIMS

What is claimed is:

1.   A system for querying heterogeneous data sources distributed over a
2   network, said system comprising:

3   a request translator for translating a request having an associated
4   data context into a query having at least a second data context associated
5   with at least one of the heterogeneous data sources; and

6   a data translator which translates received data from the data
7   contexts associated with the heterogeneous data sources into the data
8   context associated with the request.

1   2.   The system of claim 1 wherein the request is received by said request
2   translator.

1   3.   The system of claim 1 wherein the request is generated by said request
2   translator.

1   4.   The system of claim 1 wherein said request translator determines at least
2   one heterogeneous data source to query based on the request.

1   5.   The system of claim 4 wherein said request translator determines at least
2   one heterogeneous data source to query based on an ontology.

1   6.   The system of claim 4 wherein said request translator detects a difference
2   between the context of data requested by the request and the context of data
3   supplied by the data source and converts the data context of the request into the
4   data context of the data source.

1   7.   The system of claim 6, wherein the conversion is accomplished by a pre-

2   defined function, a look-up table, or a database query.

1   8.   The system of claim 1 wherein said request translator optimizes the query.

1   9.   The system of claim 1 further comprising a query transmitter which queries

2   at least one of the heterogeneous data sources using the query.

1   10.   The system of claim 9 wherein said query transmitter optimizes the query.

1   11.   The system of claim 9 wherein said query transmitter separates the query

2   into a plurality of sub-queries and queries at least one of the heterogeneous data

3   sources using the sub-queries.

1   12.   The system of claim 11 wherein the query transmitter queries a different

2   data source with each one of the sub-queries.

1   13.   The system of claim 1 wherein said data translator translates received data

2   into the data context of the request using a pre-defined function, a look-up table,

3   or a database query.

1   14.   A method for querying heterogeneous data sources over a network, said

2   method comprising the steps of:

3   (a) translating a request having an associated data context into a query

4   having at least a second data context associated with at least one of the

5   heterogeneous data sources to be queried; and

6   (b) translating received data from the data contexts associated with the

7   heterogeneous data sources into the data context associated with the request.

1   15.   The method of claim 14 further comprising the step of receiving a request
2   before step (a).

1   16.   The method of claim 14 further comprising the step of generating a request
2   before step (a).

1   17.   The method of claim 14 further comprising before step (a) the step of
2   determining at least one heterogeneous data source to query based on the request.

1   18.   The method of claim 17 further comprising before step (b) the step of
2   determining at least one heterogeneous data source to query based on an ontology.

1   19.   The method of claim 17 further comprising the steps of:
2   detecting a difference between the context of data requested by the
3   request and the context of data supplied by the data source to be queried; and
4   converting the data context of the request into the data context of
5   the data source.

1   20. The method of claim 19 wherein the data context of the request is converted
2   into the data context of the data source using a pre-defined function, a look-up
3   table, or a database query.

1   21.   The method of claim 14 further comprising before step (b) the step of
2   optimizing the query.

1   22.   The method of claim 14 further comprising the step of querying at least one
2   of the disparate data sources using the translated request.

1   23.   The method of claim 22 wherein said optimization step further comprises:
2   separating the query into a plurality of sub-queries; and

3   querying at least one of the heterogeneous data sources using the

4   sub-queries.

1   24.   The method of claim 23 wherein said querying step further comprises

2   querying a different data source with each one of the sub-queries.

1   25.   The method of claim 14 wherein step (b) further comprises translating

2   received data into the data context of the request using a pre-defined function, a

3   look-up table, or a database query.

1   26.   An article of manufacture having computer-readable program means for

2   querying heterogeneous data sources over a network embodied thereon, the article

3   comprising:

4   computer-readable program means for translating a request having

5   an associated data context into a query having at least a second data

6   context associated with at least one of the heterogeneous data sources to

7   be queried; and

8   computer-readable program means for translating received data

9   from the data contexts associated with the heterogeneous data sources into

10   the data context associated with the request.

1   27.   The article of manufacture of claim 26 further comprising computer-

2   readable program means for receiving a request.

1   28.   The article of manufacture of claim 26 further comprising computer-

2   readable program means for generating a request.

1 29.   The article of manufacture of claim 26 further comprising computer-
2 readable program means for determining at least one heterogeneous data source to
3 query based on the request.

1 30.   The article of manufacture of claim 29 wherein the determination of at least
2 one heterogeneous data source to query is based on an ontology.

1 31.   The article of manufacture of claim 29 further comprising:
2   computer-readable program means for detecting a difference
3 between the context of data requested by the request and the context of data
4 supplied by the data source; and
5   computer-readable program means for converting the data context
6 of the request into the data context of the data source.

1 32.   The article of manufacture of claim 31 wherein said computer-readable
2 program means for converting the data context of the request into the data context
3 of the data source comprises a pre-defined function, a look-up table, or a database
4 query.

1 33.   The article of manufacture of claim 26 further comprising computer-
2 readable program means for optimizing the query.

1 34.   The article of manufacture of claim 26 further comprising computer-
2 readable program means for transmitting the query to at least one of the
3 heterogeneous data sources.

1 35.   The article of manufacture of claim 26 further comprising computer-
2 readable program means for optimizing the query.

1 36.   The article of manufacture of claim 26 further comprising computer-
2 readable program means for separating the query into a plurality of sub-queries and
3 computer-readable program means for querying at least one of the heterogeneous
4 data sources using those sub-queries.

1 37.   The article of manufacture of claim 26 further comprising computer-
2 readable program means for querying a different data source with each one of the
3 sub-queries.

1 38.   The article of manufacture of claim 26 wherein said computer readable
2 program means for translating received data into the data context of the request
3 comprises a pre-defined function, a look-up table, or a database query.